

Burroughs B 5500 INFORMATION PROCESSING SYSTEM



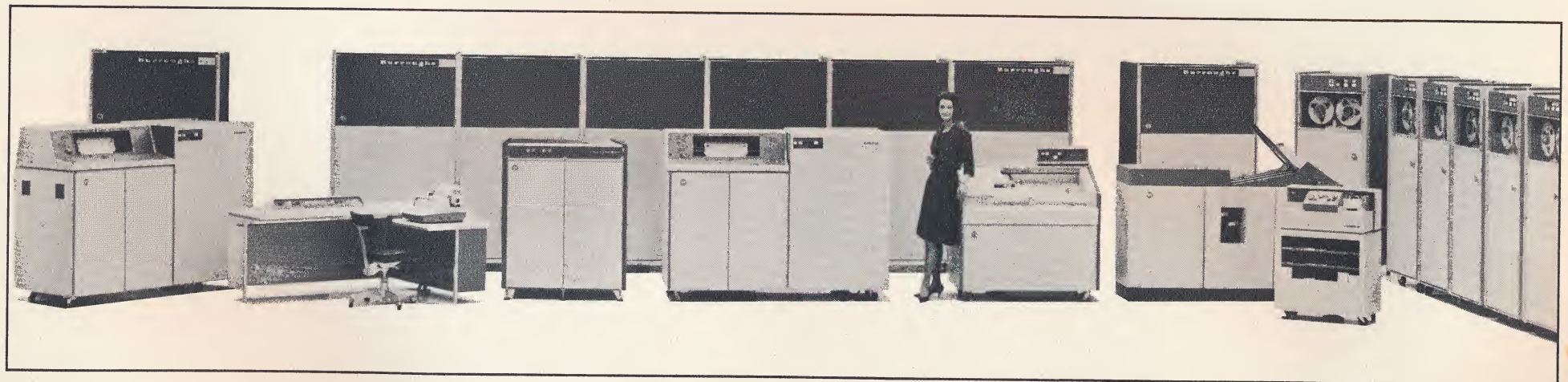
ADVANCED CONCEPTS - PROVEN IN USE

Burroughs B 5500 INFORMATION PROCESSING SYSTEM

The Burroughs B 5500 is a highly advanced information processing system that spans the medium, intermediate and large scale ranges of computer equipment. The design concepts and software of the B 5500 have been thoroughly tested in over 50 installations of its predecessor systems—the commercial Burroughs B 5000 and military Burroughs D 800 Series modular data processing systems.

These earlier Burroughs computer systems have accomplished, in thousands of hours of customer use:

- automatic control through a full-scale operating system;
- multiprocessing of independent programs, with dynamic scheduling by the operating system;
- modularity, for expansion without reprograming;
- efficient, effective use of problem oriented languages.



Burroughs

SUPPORT IN DEPTH FOR PROFITABLE OPERATION

The on-site support you can expect from Burroughs Corporation is unsurpassed in the computer industry. From placement of an order to the successful operation of your B 5500—and beyond—you'll find competent, experienced Burroughs personnel at hand to assist you.

SYSTEMS COUNSEL, TRAINING, AND INSTALLATION CONTROL.

Your local Burroughs sales and technical representatives offer expert counsel in systems analysis and design, installation planning, and operation of your B 5500 installation. Your personnel are thoroughly trained in programing techniques and systems operation. In the important pre-installation period, on-site personnel are assisted by a computer-based Installation Control System monitored by an experienced staff at our Detroit, Michigan headquarters. These local and headquarters Burroughs personnel help keep you always on schedule, help you get your B 5500 on the air smoothly.

MANAGEMENT SCIENCES AND PROFESSIONAL SERVICES.

Consulting services are available to B 5500 users in the design and development of advanced management systems. Techniques in statistical analysis, linear programing, and network analysis are available, with a complete library of scientific routines.

SYSTEMS MAINTENANCE AND MTL.

A high level of system maintainability, unique in the computer industry, results from an exclusive Maintenance Test Logic (MTL) built into the B 5500. Armed with MTL, our specially trained Field Engineers are able to pinpoint trouble and correct it in far less time than by conventional techniques.

**WORLD'S FASTEST, EASIEST TO USE
MASS RANDOM ACCESS DEVICE**
Burroughs
ON-LINE DISK FILE

The powerful advanced systems concepts of the Burroughs B 5500 are fully complemented by the revolutionary Burroughs On-Line Disk File subsystem. With its "head-per-track" design, the Disk File provides all-electronic access to any record throughout the file in an average of 20 milliseconds.

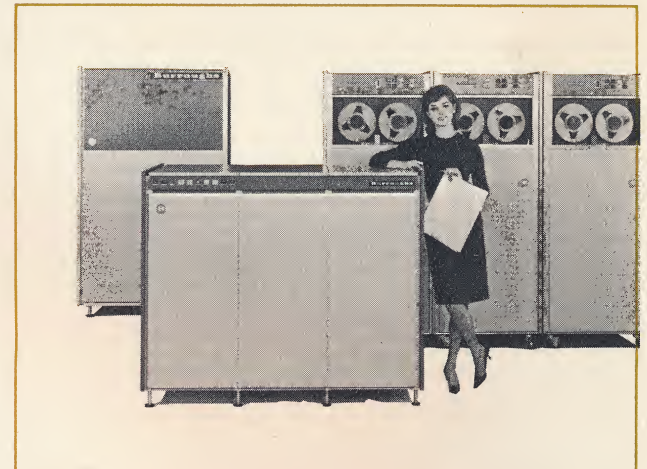
File organization, programing, and use are simplified because access is entirely by electronic switching, with no moving arms, card drops, or the like. Each record segment is equally available regardless of physical location on the disks. Multiple segments can be transferred with a single instruction.

Module size is four disks totalling 9.6 million alphanumeric characters of information capacity. Up to 100 of these modules may be used with the Burroughs B 5500, effectively extending the memory of the computer system by almost a billion characters. Transfer rate is 100,000 characters per second.

Burroughs Corporation

Detroit, Michigan 48232

In Canada: Burroughs Business Machines Ltd.
Toronto, Ontario



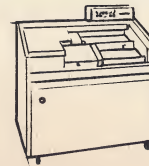


INPUT / OUTPUT EXCHANGE

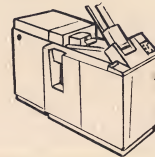
HIGH SPEED LINE
PRINTERS (UP TO 2)



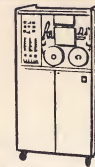
CARD READERS
(UP TO 2)



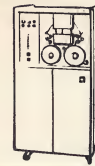
CARD PUNCH



PAPER TAPE
READERS (UP TO 2)



PAPER TAPE
PUNCH



Data
Communications
System

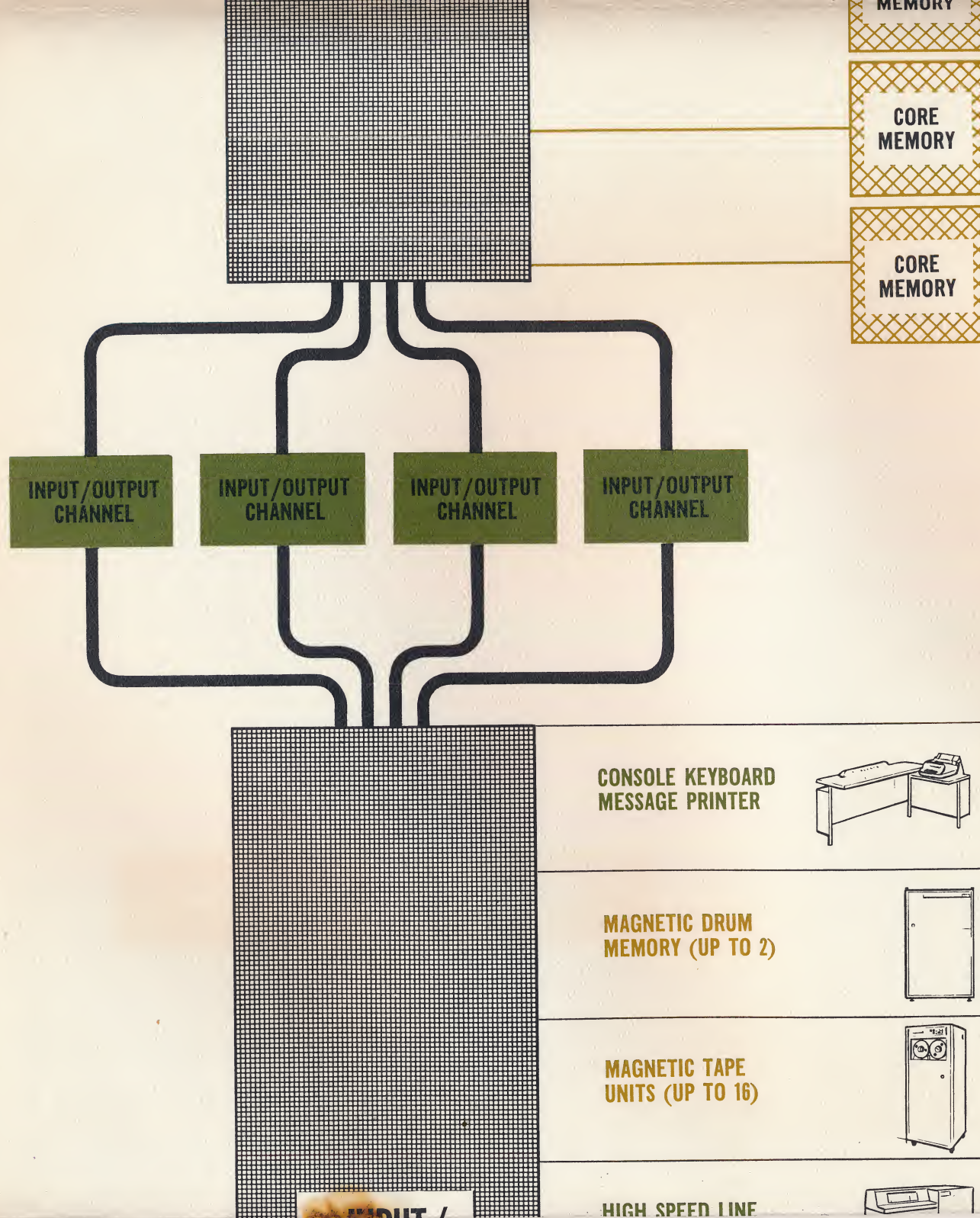
Data
Communications
Control
Unit

Disk
File
Control
Unit

On-Line
Disk File

DATA COMMUNICATIONS

Through the I/O Exchange the Burroughs Data Communication Control Unit has full data communications network control capabilities. Dial TWX, teletype, inquiry typewriter, and other terminal units may be specified.



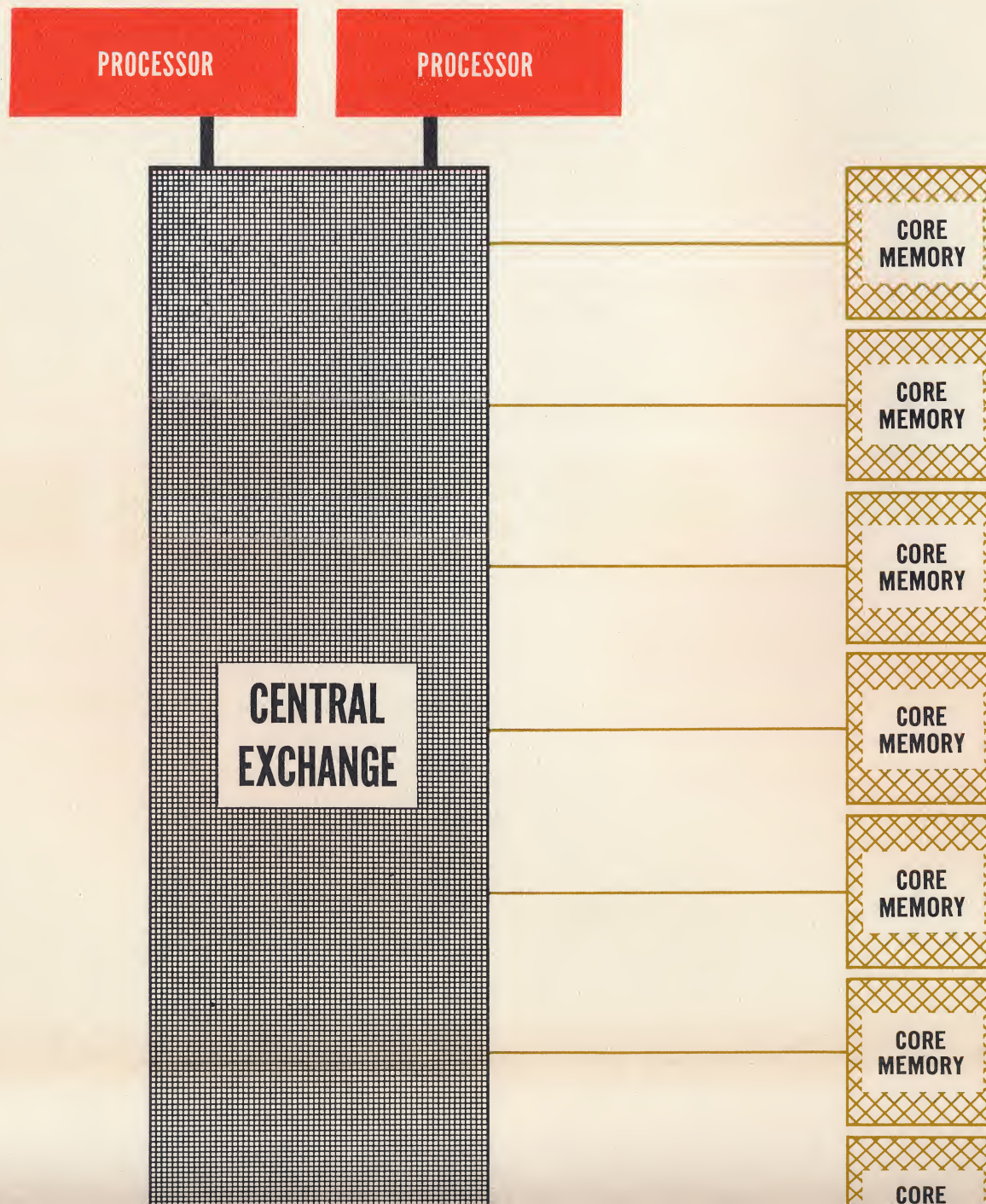
I/O CHANNELS

One to four independent input/output channels. Any channel may establish communication between any area of core memory and any I/O device. Up to four I/O operations may be performed simultaneously with computation by one or two processors. There are no fixed assignments of I/O devices to I/O channels. All I/O operations are under control of the MCP.

I/O DEVICES

Through the Input/Output Exchange, I/O devices may be connected to the I/O channels through 32 input and 32 output points. The kinds and maximum number of standard I/O devices of each kind that can be used with the B 5500 are shown on the chart. The B 5500 can be easily adapted to accept a wide variety of special I/O equipment.

ORGANIZATION OF THE Burroughs B 5500



PROCESSORS

One or two parallel, independent, solid state processors. All transfers full word parallel at one megacycle. Word and/or character operation. Fixed/floating point. Word: 49 bits including 1 parity bit, interpreted binary or alphanumeric. Instruction format: 12-bit syllables packed four per word. Unlimited indexing. Powerful, comprehensive interrupt system.

MEMORY

Magnetic core: One to eight modules of 4,096 words each. Memory modules are functionally independent, permitting simultaneous access through the Central Exchange by processors and I/O channels. Read access time: 2 usec/word, 250 nanoseconds/character.

Magnetic drum: One or two drums, of 32,768 words capacity each. Average access time: 8.5 milliseconds.

Disk file: One to 100 modules, 9.6 million alphanumeric characters per module. Average access time: 20 milliseconds. Read/write head for each track. 100KC transfer rate.

The high performance of the Burroughs B 5500 results from a high degree of simultaneous operation. This is made possible by the unique system organization shown on the accompanying chart. Among the key features of this organization are:

- The ability to expand the system to two processors, doubling computational performance.
- The ability to expand the system to eight independent magnetic core modules, permitting simultaneous memory accesses.
- The ability to expand the system to four “free-floating” input/output channels, each channel available to any I/O device and any core memory module.
- The ability to build your B 5500 system from a wide range of peripheral devices, including a flexible data communications network and the computer industry’s fastest mass random access system.
- Two switching networks—the Central Exchange and the Input/Output Exchange—unique in their ability to allow fully flexible communication between processors, memory, I/O channels, and I/O devices.

TURN LEAF FOR CHART

**ALL THESE PROVEN
ACCOMPLISHMENTS, AND
MORE, HAVE BEEN BUILT
INTO THE NEW, MORE POWERFUL
B 5500, GIVING YOU THESE
IMPORTANT BENEFITS:**

**MORE THROUGHPUT PER DOLLAR
INVESTED**

Because of its advanced logical design, the Burroughs B 5500 works as a balanced system to accomplish more, in the same period of time, than more expensive computer systems which may appear (from raw specifications) to be faster. For example, the B 5500 has the most flexible input/output channel organization of any computer system on the market. And it employs thoroughly proven multiprocessing techniques that allow the system to handle automatically a variety of production, debugging and compiling runs simultaneously.

REDUCED PROGRAMING COSTS

Programing is simpler and less costly because of exclusive hardware/software features that enable the B 5500 to rapidly compile efficient programs written in COBOL, ALGOL, FORTRAN II and FORTRAN IV. With the ease of programing in these languages come more effective review and control of the programing activity, based on standard documentation and procedures.

REDUCED OPERATING COSTS

The Master Control Program of the B 5500 is the most complete, most advanced, most tested automatic operating system ever used to control and schedule computer operations. No other operating system provides the degree of automatic control found in the MCP—control that eliminates human error and uses the computer itself to assure efficient operation. Yet, no other operating system has been so thoroughly tested, in the “real world” of customer installations.

**EXTENSIVE CAPACITY FOR
EXPANSION, WITHOUT
REPROGRAMING**

The B 5500 can grow to a very large system (chart, next page). The modularity of the system is dynamic: you may expand or contract the system at any time without reprograming—or recompiling. This principle of dynamic, program-independent modularity is exclusive with Burroughs large scale computer systems. The MCP balances the current total program mix against the available system configuration, for most efficient operation under varying conditions.
